

$$\int u^{1/2} \frac{du}{-4} = -\frac{1}{4} \int u^{1/2} du$$

$$= -\frac{1}{4} \cdot \frac{2}{3} u^{3/2} + C$$

$$u = 1 - 4x$$

$$-\frac{1}{6} (1 - 4x)^{3/2} + C$$

$$u = x^2 + 1$$

$$du = 2x dx$$

$$\frac{du}{2} = x dx$$

$$\int \frac{x dx}{(x^2 + 1)^3}$$

$$\int (x^2 + 1)^{-3} x dx$$

$$\int u^{-3} \frac{du}{2}$$

$$\frac{1}{2} \left\{ u^{-3} du \right.$$

$$\left. \frac{1}{2} \frac{u^{-2}}{-2} \right\} + C$$

$$y = -\frac{1}{4} (1 + x^2)^{-2} + C$$

$$y = \frac{-1}{4(x^2 + 1)^2} + C$$

